A NEW SPECIES OF *PTILOTUS* FROM SOUTH AUSTRALIA
(*Amaranthaceae*)

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SUMMARY

A description and an illustration are given of a new species of *Ptilotus*, *Pt. symonii* from South Australia. The type specimens are cited and some critical notes are made on some characters of the new taxon which is compared with *Pt. seminudus* (J. M. Black) J. M. Black and other species.

A recent examination of specimens of Ptilotus sent us from both the State Herbarium of South Australia (AD) and Mr. D. E. Symon (Herbarium ADW) revealed the existence of a hitherto unknown species which is here described as follows:—

Ptilotus symonii Benl, sp, nov. (Fig. 1. a-e).

Planta perennis, pluricaulis, in statu iuvenili leviter tomentosa, demum subglabra. Rhizoma lignosum adscendens, plusminusve tortuosum, fusiforme, in speciminibus examinatis usque ad 25 cm longum, superne 16 mm crassum. Caules 50 cm et ultra longi, 1-3 mm diametro (in basi lignosa 3,5 mm crassi), virgati, saepius curvato-adscendentes, visu cinerei dein pallido-virides; iuveniles teretiusculi per totam longitudinem pilis crispis crassiusculis nodulosis, ad 1,5 mm longis dense, adulti sulcati sparse induti. Rami valde ramulosi, ramuli tenerrimi subdensi, adscendentes, divaricati vel patulo-erecti, ad 20 cm longi; basales 7-22 mm distantes, summi approximati, usque ad inflorescentiam dense foliati.

Folia permulta minora quin etiam minima, alterna interdum speeie secunda (Fig. a), 2-6 mm, raro ad 13 mm distantia, primo modice puberula denique glabra et laete viridia, plusminusve coriacea, integerrima, siccitate marginibus raro subsinuatis, nervo medio subtus vix prominente; omnia inferne attenuata, breviter vel brevissime petiolata (petiolo indistincto ad 2 mm longo), in apice mucronata (mucrone 0,1-0,2 mm longo); maiora 1-2 cm longa et 2-3 mm lata oblongo-lanceolata, minora saepe acicularia.

Spicae haud amplae numerosae, hemisphaericae (1,5-2,5 cm diametro) vel subovoideae (2,5 cm longae et 1,8 cm latae), pedunculatae, solitariae ramulos terminantes, raro subsessiles laterales, rhachide breviusculo (0,7-1,3 cm longo) dense villoso, pilis plusminusve flexuosis nodosis, 1-1,5 mm longis. Flores (15-25, raro ultra) haud dense congesti, demum stramineo-flaveseentes, albido-pilosi.

Bractea bracteolaeque acutae integerrimae, pilosae, extus pilis articulatis, apicem attingentibus quin etiam paullulo exeedentibus obsessae, uninervae, post lapsum perianthii superstites, inaequales: Braetea inferior rigida, subcordato-lanceolata 2,5-3 mm longa et 1-1,2 mm lata, fuseeseens, nervum medium versus obscura, in dorso omnino pilosa, pilis articulatis, eirciter 1 mm longis densius vestita. Bracteolae 2 distincte maiores subcarinatae, membranaceae, tenues, ovato-lanceolatae 4-6 mm longae et 2 mm latae, tantum nervum medium fusees-centem versus pilos circiter 1,5 mm longos gerentes, lateribus glabris generaliter incoloratis, hyalinis, nitentibus, perianthio adpressae.

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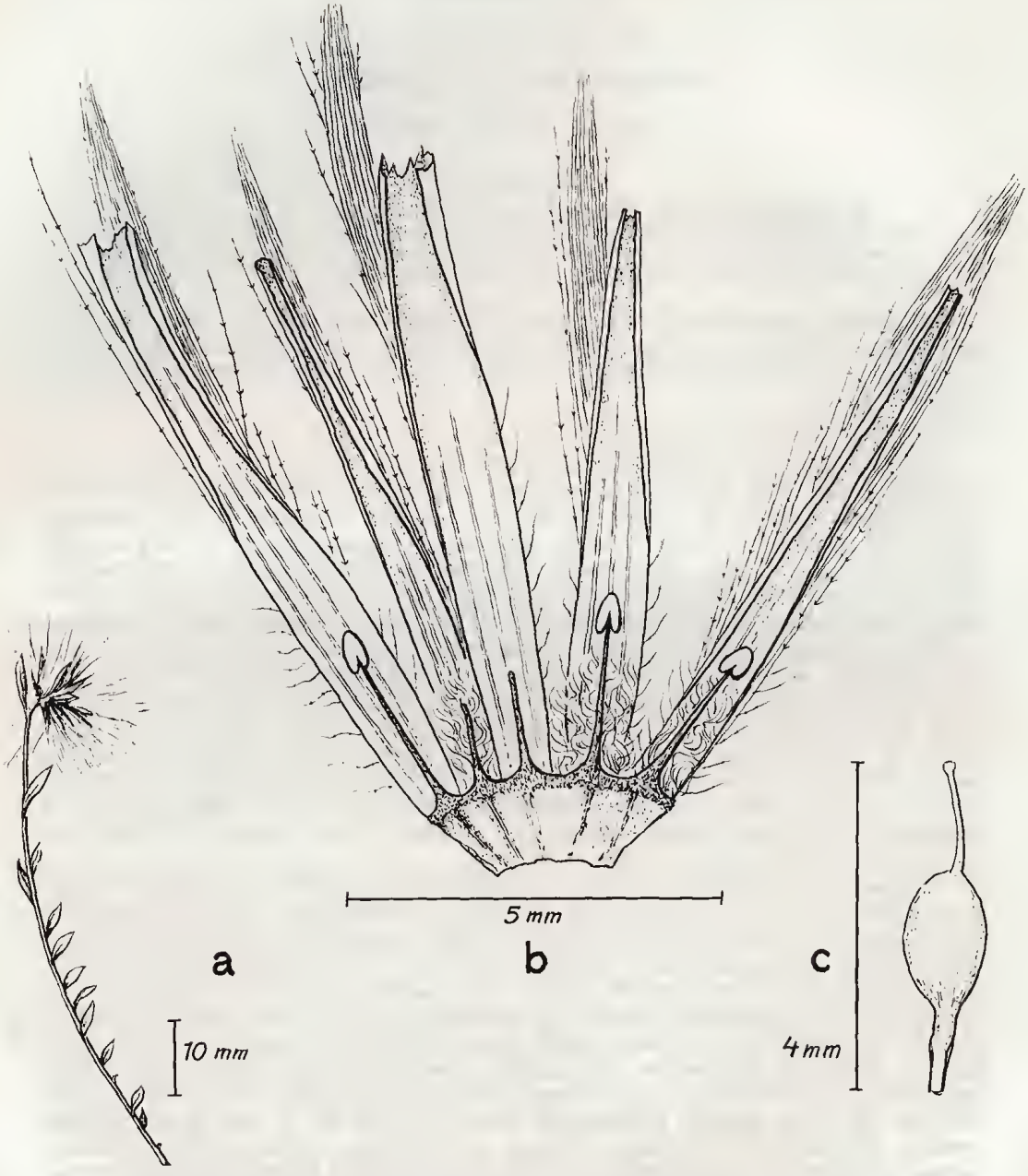

Fig. 1. *Ptilotus symonii* Benl: Pedicelled spike (from AD 96131068) with the tiny upper leaves (Fig. a); perianth (from AD 968020399) with stamens and staminal cup spread open, inner view (Fig. b); pistil (Fig. e).

Perianthium pentaphyllum elongato-erectum dein subcampanulato-patens, basim constrictam cartilagineam versus sensim indureseens, tubum angustum cylindraceum 0,8-1,2 mm longum, extus pubescentia plusminusve absconditum formans. Tepala elongato-linearia vel lineari-oblonga, anguste hyalino-marginata, trinervia—nervis lateralibus (superne saepius indistinctis) areolam mcdianam impellucidam, incrassatam, coloratam includentibus—, ecarinata, integerrima, truncata, apicibus inconspicuis, fere nudis 3-4 mm longis, rufescentia dein viridi-flavescentia, pilis dorsalibus strictis, rectis, articulatis, in articulis breviter verti-cillatis ad 9 mm (in ima basi circiter 1 mm) longis, imprimis dimidio inferiori areolae medianae tepalorum orientibus, sed apicem superantibus adpresse denseque obtecta, pilis marginalibus tenuioribus, brevioribus sparse ciliata, intus demum albido-laevigata, inaequalia: 2 exteriora 9-11 mm longa et 0,6-0,9 mm lata, marginibus (ca. 0,15 mm) in apicem paulo contractum, eroso-denticulatum, pilis dorsalibus longe (ad 2 mm) superatum transeuntibus (Fig. b); 3 interiora paullum breviora, sed angustiora (0,4-0,6 mm lata) et acutiora, marginibus superne involutis, inferne pilis crispis, nodulosis, uni sive duobus lateribus tepali, praecipue autem margini tubi perianthii orientibus et introflexis, plusminusve copiosis munita.

Stamina staminodiaque 5, in floribus examinatis semper 3 fertilia et 2 abortiva, basi modice (ad 0,2 mm) dilatata filamentorum applanatorum cupulam membranaceam, hyalinam, tubo perianthii adnatam formantia, anulo minimo (0,15-0,3 mm) libero integro, pseudostaminodiis nullis, filamentis ligulatis superne subulatis, interdum brunnescentibus, circiter 2 mm longis, abortivis rudimentis antherarum coronatis vel anantheris brevioribus (0,5-1,5 mm); antherae bilo-culares, flavae, lato-ellipsoideae 0,3-0,4 mm longae et 0,2-0,25 mm latae, dorso affixiae.

Ovarium subclavatum, conspicue stipitatum 2,5-3 mm longum (stipite circiter 1 mm longo incluso) et 0,7-1 mm latum; stylus sicut ovarium regulariter glaber-rimum 1,3 mm longum et circiter 0,1 mm diametro, plusminusve excentricum; stigma inconspicuum haud distincte capitellatum, papillosum.

Holotype of species—5 miles south of Koonalda Homestead (east of Euela), south-western region of South Australia; D. E. Symon, No. 4684, 21.II.1967, AD No. 968020399.

Isotypes—Idem, A, ADW, CANB, K, LE, M, TI, UC, W.

Further collection—Other material of this taxon had already been collected by P. G. Wilson (No. 1635) in North West Plains, ca. 40 km East of the Western Australian border, off Eyre Highway, 13.IX.1960 (AD 96131068). Our description is based on Wilson's specimens, too, which, therefore, may be regarded as Paratypes.

Habitat—Symon's plants were growing "in open Mallee scrub" and "mostly found in the twiggy remains of dead or dying plants of Westringia rigida". Wilson's material had been gathered in Acacia woodland.

Characteristics—The new taxon superficially approaches the South Australian *Pt. seminudus* (J. M. Black) J. M. Black as regards the general form and colour of the spikes. In this species, too, the outer perianth segments bear a truncate and denticulate apex, and the inner tepals are distinctly exceeded by dorsal hairs. The stems arising from a strong rhizome (see "Australian Plants" 4: 117, 1967) are pubescent in about the same way, when young.

In *Pt. seminudus*, however, the stems and branches are constantly shorter and thicker, the leaves (especially the radical ones) considerably larger, the spikes richer, the bract and braeteoles nearly equally long and more acute; the bract being usually less hairy. Moreover, the tepals are longer, the inner ones more

narrowed towards the apex, and the points of the outer segments are not so markedly overtipped by the erect dorsal hairs.

In both species these hairs are articulate and of nearly the same length, but in *Pt. symonii* they primarily rise from the lower half of the tepals thus covering the perianth tube, while in *Pt. seminudus* the basal part of the segments looks naked, revealing the hirsute subglobular tube. In this plant we find inflexed hairs inside the perianth arising from the margins of the inner tepals above the tube, whereas in *Pt. symonii* a woolly pubescence of the inner segments takes its origin from the edge of the perianth tube, too.

In addition to these characters, numerous details of the reproductive organs diverge: e.g. two stamens only are fertile in *Pt. seminudus*, its staminal cup shows a comparatively higher free ring, and between two filaments much broadened at their base you may find a small lobe, at times; the ovary being pilose in summit. *Pt. seminudus*, therefore, differs markedly from our taxon.

As a striking particular feature of diagnostic importance are to be regarded the numerous and uncommonly small narrow leaves densely borne along the branches and branchlets of *Pt. symonii*. Except for the bushy and extremely branched *Pt. parvifolius* (F. v. Muell.) F. v. Muell., no other representative of the genus is characterised by such leaflets. But these two plants are quite unlike one another.

An additional trait of diagnostic interest is given by the relatively long and strict dorsal hairs of the intense pubescence in the perianth, distinctly exceeding and concealing the outer as well as the inner tepals, which look tapering because of this. To a lesser extent, we find a similar appearance in *Pt. arthrolasius* F. v. Muell., a subshrub with a yellowish pubescence, and still more in *Pt. eriotrichus* (W. V. Fitzg. ex Ewart & White) W. V. Fitzg., another frutescent species with a dense greyish tomentum. The shorter hairs in the small flowers of *Pt. forrestii* F. v. Muell. and the longer ones in *Pt. villosiflorus* F. v. Muell. are less distinctly articulate, and mostly lack the verticillate toothlets at the nodules, as is the case in *Pt. arthrolasius*, too. The tepals of the narrow-spiked *Pt. lanatus* Cunn. ex Moq. (including var. *glabrobracteatus* Benl) are surpassed by short bristly and thickish hairs, those of the long-spiked *Pt. leptotrichus* Benl by a tuft of relatively few articulate hairs. In *Pt. albidus* (C. A. Gardn.) Benl, *Pt. brachyanthus* (F. v. Muell. ex Benth.) F. v. Muell. and *Pt. petiolatus* L. Farmar the perianth is more or less completely hidden among dorsal hairs forming an intricate wool. Each of the cited species has a dissimilar appearance of its habit, of its leaves, spikes or floral organs, and there is no doubt left as to the specific nature of our well distinguishable taxon: *Pt. symonii* does not at all agree with any of the species hitherto described.

Name—The plant is named in honour of Mr. David E. Symon, B.Ag.Sc., Botanist at the Waite Agricultural Research Institute. Mr. Symon is one of the collectors of the new species, drew my attention to it, and supplied us with sufficient material.